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EXAMINER	
STANLEY, MARK P	

ART UNIT	PAPER NUMBER
2427	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/798,620	LANE, RICHARD DOIL	
	Examiner	Art Unit	
	MARK P. STANLEY	2427	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *See Continuation Sheet* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *See Continuation Sheet* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Disposition of Claims: Claims pending in the application are 1-15,17,18,20-30,32,34-40,42-54,56,58-64,66-81,84-86,88-94,96,98-102,105,106,108-112 and 115-130.

Continuation of Disposition of Claims: Claims rejected are 1-15,17,18,20-30,32,34-40,42-54,56,58-64,66-81,84-86,88-94,96,98-102,105,106,108-112 and 115-130.

DETAILED ACTION

Miscellaneous

1. This action is in response to amendment dated 12/11/2009

2. Claims 1-15, 17-18, 20-30, 32, 34-40, 42-54, 56, 58-64, 66-81, 84-86, 88-94, 96, 98-102, 105-106, 108-112, 115-130 are currently pending. Claims 1, 18, 25, 43, 49, 67, 73, 80-81, 93, 102 and 112 have been newly amended. Claims 16, 41, and 65 have been newly canceled. Claims 19, 31, 33, 55, 57, 82-83, 87, 95, 97, 103-104, 107, 113 and 114 have been previously canceled.

Response to Arguments

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 1-2, 5, 7-12, 14, 17, 20-23, 25-26, 29, 32, 35-36, 38, 42, 44-47, 49-50, 53, 56-60, 62, 66, 68-71, 73-74, 77, 79-81, 84-86, 91, 93-94, 96-97, 101-102, 105-106, 111-112, 115-118, 122 and 124-130 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos) in view of Kost et al. (US 2002/0154691 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short).

Regarding claim 1, Christopoulos discloses "an apparatus, operable in a wireless communication system, comprising:

a customer manager to determine a user preference for selective re-encoding of a multimedia stream;" ([0035], [0036]-[0038], [0046], Figs. 2-3 and 5)

"an encode manager included within wireless service provider equipment of the wireless communication system for receiving the multimedia stream" ([0033], [0035]-[0036], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"an encoder system included within the wireless service provider equipment for selectively re-encoding the received stream using the selected one of the plurality of encoding parameter sets to output an encoded stream with principles set forth by the selected one of the plurality of encoding parameter sets" ([0007], [0035], [0037]-[0038], [0046], Figs. 1-3 items 350 and 360, item 125 the transcoder selects a scheme to re-encode the multimedia stream based upon various factors including user preferences).

But, while Christopoulos states selecting multiple different parameter sets to encode two different types of multimedia data being an encoding parameter set (*2nd encoding parameter set*) for encoding a video data type (Fig. 5, [0046] where video data is considered the 2nd data type) and an encoding parameter set (*3rd encoding*

parameter set) for encoding an image data type (Fig. 4, [0039], where image data is considered the 3rd data type) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the use of a three encoding parameter sets for encoding three different data type or an encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set (*1st encoding parameter set*) to encode audio data ([0079]-[0080], [0084], Fig. 1, where audio data is considered the 1st data type) and an encoding set (*4th encoding parameter set*) to encode both video and audio data.

Further, while Christopoulos states that the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that discloses an encoding set to encode both video audio data and an encoding set to encode for only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 2, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the encoding scheme is selected from a group that includes a scheme based on a system bandwidth, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, a scheme based on a user preference and a scheme based on characteristics of a mobile station" ([0036-[0038], [0046]-[0047], Fig. 3).

Regarding claim 5, Christopoulos, Short and Kost disclose "the apparatus of claim 2, further comprising an encoder for executing the selected one of the plurality of encoding parameter sets based on the encoding scheme" ([0014], Fig. 1 item 125).

Regarding claim 7, Christopoulos, Short and Kost disclose "the apparatus of claim 1 further comprising a bandwidth manager that dynamically determines an available bandwidth for a requested multimedia stream" ([0007], [0036], [0046]).

Regarding claim 8, Christopoulos, Short and Kost disclose "the apparatus of claim 1, further comprising a decoder for receiving the multimedia stream and decoding the received stream to output a decoded stream, wherein the encoder system re-encodes the received stream by re-encoding the decoded stream using the selected one of the plurality of encoding parameter set to output the encoded stream with principles set forth by the encoding parameter set" ([0036]-[0038], [0046], Figs. 3 and 5).

Regarding claim 9, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the encoder manager comprises a bandwidth manager for selecting the one of the plurality of the encoding parameter sets in accordance with the encoding scheme" ([0007], [0036], [0046]).

Regarding claim 10, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the encoder system comprises an encoder for executing the selected one of the encoding parameter sets" ([0014], Fig. 1 item 125).

Regarding claim 11, Christopoulos, Short and Kost disclose "the apparatus of claim 1, further comprising a transceiver for wirelessly transmitting the re-encoded stream to a mobile station" ([0003], [0007], [0035], Fig. 1 item 130, a transmitter and receiver at both ends for bi-directional wireless communications would be necessary).

Regarding claim 12, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the encoding system providing an output configurable for handheld devices that require a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047]).

Regarding claim 14, Christopoulos, Short and Kost disclose "the apparatus of claim 1,

wherein the received stream comprises a stream of a first resolution, and

wherein the encoding system re-encodes the received stream by re-encoding the stream of a first resolution to a stream of a second resolution, a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047], [0056], Fig. 3).

Regarding claim 17, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the encode manager selects two or more of the plurality of encoding parameter sets in accordance with an encoding, scheme" (when two types of data are being streamed such as image and video or video and audio).

Regarding claim 20, Christopoulos, Short and Kost disclose "the apparatus of claim 1, further comprising a computer configured to receive the multimedia stream from a mobile station" ([0003], [0035]).

Regarding claim 21, Christopoulos, Short and Kost disclose "the apparatus of claim 20, wherein the mobile station is operable in the wireless communication system" ([0003], [0035]).

Regarding claim 22, Christopoulos, Short and Kost disclose "The apparatus of claim 1, wherein the multimedia stream is received using an over the air communication air interface" ([0007], [0035]).

Regarding claim 23, Christopoulos, Short and Kost disclose "the apparatus of claim 1, wherein the multimedia stream is received using an internet connection" ([0003], [0035]).

Regarding claim 25, Christopoulos discloses "a method for providing digital multimedia in a wireless communication system, comprising:

determining with a customer manager of the wireless communication system a user preference for selective re-encoding of a multimedia stream" ([0035], [0036]-[0038], [0046], Figs. 2-3 and 5)

"receiving the multimedia stream at an encode manager of the wireless communication system;" ([0033], [0035]-[0036], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"selecting at least one of a plurality of encoding parameter sets in accordance with an encoding scheme, wherein the encoding scheme includes a scheme based on a user preference, wherein the multimedia stream includes a plurality of different types of data," ([0007], [0035], [0037]-[0038], [0046], Figs. 1-3 items 350 and 360, item 125 the transcoder selects a scheme to re-encode multimedia stream based upon various factors including user preferences)

selectively re-encoding, with an encoder system of the wireless communication system, the received stream using the selected one of the plurality of encoding parameter sets to output an encoded stream with principles set forth by the selected

one of the plurality of encoding parameter sets" ([0007], [0037]-[0038], [0046], Fig. 1, Fig. 3 items 350 and 360, item 125 the transcoder selects a scheme to re-encode multimedia stream based upon various factors including available bandwidth).

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 26, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising selecting the first encoding scheme from a group of encoding schemes that include a scheme based on a system bandwidth, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, the scheme based on the user preference and a scheme based on characteristics of a mobile station" ([0036-[0038], [0046]-[0047], Fig. 3).

Regarding claim 29, Christopoulos, Short and Kost disclose "the method of claim 26, further comprising an encoder for executing the selected one of the plurality of encoding parameter sets based on the encoding scheme" ([0014], Fig. 1 item 125).

Regarding claim 32, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising receiving the multimedia stream at a decoder and decoding the received stream to render output a decoded stream" ([0036]-[0038], [0046]-[0047], Figs. 3 and 5).

Regarding claim 34, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising executing the selected at least one of the encoding parameter sets using an encoder" ([0014], Fig. 1 item 125).

Regarding claim 35, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising wirelessly transmitting the re-encoded stream" ([0003], [0007], [0035], Fig. 1 item 130, a transmitter and receiver at both ends for bi-directional wireless communications would be necessary).

Regarding claim 36, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising generating an output, configurable for handheld devices

that require a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047]).

Regarding claim 38, Christopoulos, Short and Kost disclose "the method of claim 25,

wherein the received stream includes a stream of a first resolution, and

wherein the encoding system re-encodes the received stream of the first resolution to stream of a second resolution, a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047], [0056], Fig. 3).

Regarding claim 42, Christopoulos, Short and Kost disclose "the method of claim 25, wherein selecting at least one of the plurality of encoding parameter sets comprises selecting two or more of the plurality of encoding parameter sets in accordance with the encoding scheme,

wherein selectively re-encoding the received stream comprises selectively re-encoding the received stream using the selected two or more of the plurality of encoding parameter sets"(when two types of data are being streamed such as image and video or video and audio).

Regarding claim 44, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising receiving the multimedia stream from a mobile station" ([0003], [0035]).

Regarding claim 45, Christopoulos, Short and Kost disclose "the method of claim 44, wherein the mobile station is operable in the wireless communication system" ([0003], [0035]).

Regarding claim 46, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising the multimedia stream is received using an over the air communication air interface" ([0007], [0035]).

Regarding claim 47, Christopoulos, Short and Kost disclose "the method of claim 25, further comprising receiving the multimedia stream via an internet connection" ([0003], [0035]).

Regarding claim 49, Christopoulos discloses "an apparatus, operable in a wireless communication system, comprising:

means for receiving, within the wireless communication system, a decoded stream;" ([0033], [0035]-[0036], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"means for determining a user preference for selectively re-encoding the decoded stream;" ([0035])

"means for selecting, within the wireless communication system, at least one of a plurality of encoding parameter sets in accordance with an encoding scheme to use for re-encoding the received stream" ([0007], [0037]-[0038], [0046], Fig. 1, Fig. 3 items 350 and 360, item 125 the transcoder selects a scheme to re-encode multimedia stream based upon various factors including user preference).

"wherein the encoding scheme includes a scheme based on the user preference" ([0035]).

"wherein the decoded stream includes a plurality of different types of data" [0039], [0046])

"means for re-encoding, within the wireless communication system, the received decoded stream to output an encoded stream in accordance with the selected one of the plurality of encoding parameter sets" ([0036]).

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the

use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference

of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 50, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for selecting the encoding scheme from a group of encoding schemes that include a scheme based on a system bandwidth, a scheme based on a wireless receiver capability, t scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, the scheme based on the user preference and a scheme based on characteristics of a mobile station" ([0036-[0038], [0046]-[0047], Fig. 3).

Regarding claim 53, Christopoulos, Short and Kost disclose "the apparatus of claim 50, further comprising means for executing the selected one of the plurality of encoding parameter sets using an encoder" ([0014], Fig. 1 item 125).

Regarding claim 56, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for receiving the multimedia stream at a decoder

and decoding the received stream to output the decoded stream" ([0036]-[0038], [0046]-[0047], Figs. 3 and 5).

Regarding claim 58, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for executing the selected one of the encoding parameters sets using an encoder" ([0014], Fig. 1 item 125).

Regarding claim 59, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for transmitting the re-encoded stream" ([0003], [0007], [0035], Fig. 1 item 130, a transmitter and receiver at both ends for bi-directional wireless communications would be necessary).

Regarding claim 60, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for generating an output, configurable for handheld devices that require a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047]).

Regarding claim 62, Christopoulos, Short and Kost disclose "the apparatus of claim 49,

wherein the received stream includes a stream of a first resolution, and

wherein the encoding system re-encodes the received stream of the first resolution to stream of a second resolution, a first frame rate and a first bandwidth" ([0002], [0036]-[0038], [0046]-[0047], [0056], Fig. 3).

Regarding claim 66, Christopoulos, Short and Kost disclose "the apparatus of claim 49, wherein the means for selecting at least one of the plurality of encoding parameter sets comprises selecting two or more of the plurality of encoding parameter sets in accordance with the encoding scheme,

wherein selectively re-encoding the received stream comprises selectively re-encoding the received stream using the selected two or more of the plurality of encoding parameter sets" (when two types of data are being streamed such as image and video or video and audio).

Regarding claim 68, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for receiving the multimedia stream from a mobile station" ([0003], [0035]).

Regarding claim 69, Christopoulos, Short and Kost disclose "the apparatus of claim 68, wherein the mobile station phone is operable in wireless communication system" ([0003], [0035]).

Regarding claim 70, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for receiving the multimedia stream via a communication air interface" ([0007], [0035]).

Regarding claim 71, Christopoulos, Short and Kost disclose "the apparatus of claim 49, further comprising means for receiving the multimedia stream via an internet connection" ([0003], [0035]).

Regarding claim 73, Christopoulos discloses "a mobile station, operable in a communication system, comprising:

a transceiver configured to communicate with a wireless provider system; and" ([0003], [0007], [0035], Fig. 1 item 130, a transmitter and receiver at both ends for bi-directional wireless communications would be necessary)

"a processor for displaying a multimedia stream received from the wireless provider system via the transceiver, wherein the multimedia stream is encoded using one of a plurality of encoding parameter sets in accordance with an encoding scheme selected from a group of encoding schemes" ([0036]-[0039], [0046], Fig. 3).

"wherein the selected encoding scheme comprises a scheme based a user preference," ([0036])

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each

data packet used to select an encoding set), Christopoulos does not explicitly state the use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of

only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 74, Christopoulos, Short and Kost disclose "the mobile station of claimed in 73, wherein the group of encoding scheme consisting of a scheme based on a system bandwidth, a scheme based on available system bandwidth, a scheme based on a wireless receiver capability, a scheme based on a number of users requesting a specific multimedia stream at a designated QoS, a scheme based on a multimedia data type, the scheme based on the user preference and a scheme based on characteristics of a mobile station" ([0036]-[0038], [0046]-[0047], Figs. 3 and 5).

Regarding claim 77, Christopoulos, Short and Kost disclose "the mobile station of claim 74, further comprising an encoder for executing the one of the encoder parameter sets based on the encoding scheme" ([0014], [0035], Fig. 1 item 125).

Regarding claim 79, Christopoulos, Short and Kost disclose "the mobile station of claim 74, further comprising a bandwidth manager for determining the available bandwidth for a requested multimedia stream" ([0007], [0035]-[0036], [0046]).

Regarding claim 80, Christopoulos discloses "a communication system, comprising:

"a customer manager to determine a user preference for selective re-encoding of a multimedia stream" ([0035], [0036]-[0038], [0046], Figs. 2-3 and 5)

"an encode manager for receiving the multimedia stream, wherein the multimedia is at a first resolution; and" ([0033], [0035]-[0036], [0046]-[0047], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"an encoder system for re encoding the received stream to a second resolution using an encoding parameter set selected from a plurality of encoding parameter sets to selectively render an encoded stream with principles set forth by the selected encoding parameter set, wherein the selected encoding parameter set is determined based on an encoding scheme selected from a group of encoding schemes" ([0037]-[0038], [0046], Fig. 1, Fig. 3 items 350 and 360, item 125 the transcoder selects a scheme to re-encode multimedia stream based upon various factors)

"wherein the encoding scheme comprises a scheme based on user preference" ([0036]).

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the

use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference

of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 81, Christopoulos, Short and Kost disclose "a communication system, comprising:

at least one decoder receiving incoming encoded multimedia streams and decoding the streams to render decoded streams;" ([0033], [0045]-[0036], [0046]-[0047], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"a customer manager to determine a user preference for selective re-encoding of a decoded stream" ([0035], [0036]-[0038], [0046], Figs. 2-3 and 5)

"at least one encoding system configured for receiving the decoded stream and encoding the decoded stream using at least one of a plurality of encoding parameter sets to render an encoded stream;

"at least one computer that selects the at least one of the plurality of encoding parameter based on a user preference, wherein at least one of the multimedia streams includes a plurality of different types of data, wherein the plurality of encoding parameter sets include a first encoding parameter set for encoding only a first type of the plurality of types of data, a second encoding parameter set for encoding only a second type of

the plurality of types of data different from the first type" ([0036]-[0039], [0046]-[0047], Fig. 1, Fig. 3)

"at least one wireless transceiver for transmitting an encoded stream" ([0003], [0007], [0035], Fig. 1 item 130, a transmitter and receiver at both ends for bi-directional wireless communications would be necessary)

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 84, Christopoulos, Short and Kost disclose “the system of Claim 81, wherein the computer further determines which of the plurality of encoding parameter sets to use based at least in part on a wireless mobile receiver capability” ([0035], [0036]-[0038], [0046], Figs. 3 and 5).

Regarding claim 85, Christopoulos, Short and Kost disclose “the system of Claim 81, wherein the computer further determines which of the plurality of encoding

parameter sets to use based at least in part on a number of users requesting a specific multimedia stream at a designated QoS for that stream" ([0035], [0036]-[0038], [0046], Figs. 3 and 5).

Regarding claim 86, Christopoulos, Short and Kost disclose "the system of Claim 81, wherein the computer further determines which of the plurality of encoding parameter sets to use based at least in part on a multimedia data type" ([0035], [0036]-[0038], [0046], Figs. 3 and 5).

Regarding claim 91, Christopoulos, Short and Kost disclose "the system of Claim 81, wherein at least one of the plurality of encoding parameter sets is capable of encoding a multimedia stream at a resolution of a quarter common intermediate format (QCIF) or smaller" ([0046]-[0047]).

Regarding claim 93, Christopoulos discloses "a method for wirelessly providing digital multimedia within a wireless communication system, comprising:

receiving an encoded multimedia stream;

decoding the stream to render a decoded stream;

selecting at least one of a plurality of encoding schemes to re encode the stream at a wireless provider facility to render a re-encoded stream based on a user preference

"wherein at least one of the multimedia streams includes a plurality of different types of data, wherein the plurality of encoding parameter sets include a first encoding parameter set for encoding only a first type of the plurality of types of data, a second encoding parameter set for encoding only a second type of the plurality of types of data different from the first type" ([0036]-[0039], [0046]-[0047], Figs. 4-5)

wirelessly transmitting the re-encoded stream to at least one wireless mobile station" ([0035], [0036]-[0038], [0046]-[0047], Figs. 3 and 5).

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and

a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 94, Christopoulos, Short and Kost disclose “the method of Claim 93, wherein the selecting act is undertaken dynamically” ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 96, Christopoulos, Short and Kost disclose "the method of Claim 93, wherein the selecting act is undertaken based at least in part on a wireless mobile receiver capability" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 101, Christopoulos, Short and Kost disclose "the method of Claim 93, wherein the selecting act is undertaken based at least in part on a multimedia data type" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 102, Christopoulos discloses "a wireless provider system, comprising:

means for decoding a received encoded multimedia stream, wherein the encoded multimedia stream includes a plurality of different types of data;" ([0039], [0046])

"first means for re-encoding the stream only a first type of the plurality of types of the data;" ([0039])

"second means for re-encoding the stream only a second type different from the first type of the plurality of types of the data;" ([0046])

logic means for determining which one of the first, second means for re-encoding to use, based on at least one factor that includes a user preference, wherein the user preference indicates which of the first, second means to use when encoding the multimedia stream" ([0035], [0036]-[0038], [0046]-[0047], Figs. 3 and 5).

But, while Christopoulos states selecting multiple different sets to encode two different types of multimedia data being image (Fig. 4, [0039]) and video (Fig. 5, [0046]) where the user preferences determine which set to use (the hints associated with each data packet used to select an encoding set), Christopoulos does not explicitly state the use of a third encoding parameter set for encoding multiple types of the plurality of types of data.

However, Kost discloses an encoding set to encode both video and audio data and an encoding set to encode audio data ([0079]-[0080], [0084], Fig. 1).

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system

that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 105, Christopoulos, Short and Kost disclose "the system of Claim 102, wherein the factor is a wireless user characteristic" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 106, Christopoulos, Short and Kost disclose "the system of Claim 102, wherein the factor is a multimedia data type" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 111, Christopoulos, Short and Kost disclose "the system of claim 102, wherein the factor is selected from group of factors that include a factor based on a system bandwidth, a factor based on a current available system bandwidth, a factor based on a wireless user characteristic, a factor based on a number of users

requesting a specific multimedia stream at a designated QoS a factor based on a multimedia data type and the factor based on the wireless user preference" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 112, Christopoulos discloses "a communication system, comprising:

decoder means for receiving incoming encoded multimedia streams and decoding the streams to output decoded streams;" ([0033], [0045]-[0036], [0046]-[0047], Fig. 1 item 120 gateway with item 125 transcoder receives a multimedia stream from item 113 multimedia storage)

"encoder means for receiving and encoding at least one of the decoded streams using one of a plurality of encoding parameter sets to output an encoded stream," ([0036])

"wherein the encoder means further includes means for selectin~ the one of the plurality of encoding schemes based on a user preference, wherein at least one of the multimedia streams includes a plurality of different types of data, wherein the plurality of encoding parameter sets include a first encoding parameter set for encoding only a first type of the plurality of types of data, a second encoding parameter set for encoding only a second type of the plurality of types of data different from the first type" ([0036]-[0039], [0046]-[0047], Fig. 1, Figs. 4-5)

But, Christopoulos does not explicitly state dynamically determining a current bandwidth available for the multimedia stream based on a current number and types of

users. However, Kost teaches dynamically estimating the available bandwidth available and transcodes the stream based on a current number and types of users ([0020], [0035], Figs. 2-3)

Further, while Christopoulos states the user preference further specifies a demand to provide the multimedia stream at a lowest cost (where cost is assumed to be bandwidth) and selecting one of the plurality of encoding parameter sets that provides a high rate of compression and a lower quality of service to provide the lowest cost in accordance with the demand specified by the user preference (when the hint associated with the data packet indicating user preference indicates a high rate of compression and a lower quality), Christopoulos does not explicitly state the preference being with respect to a lower billing cost only with respect to a lower bandwidth cost.

However, Short discloses where a user selects a preference indicating a bandwidth cost, where the bandwidth cost is correlated to a billing cost, the lower the bandwidth cost the lower the billing cost (col. 13 line 58 - col. 14 line 2).

Therefore it would have been obvious at the time of the invention to combine the teachings of Christopoulos for adaptive encoding in a wireless communication system that uses multiple encoding parameters sets for specific types of data selected based upon user preferences with the teachings of Kost that disclose an encoding set to encode both video audio data and an encoding set to encode and a third data type of only audio data and further with the teachings of Short for associating a user preference of bandwidth cost with billing cost. One would have been motivated to do so to provide the user the capability to place a higher priority on audio data over video data via user

preferences for video teleconferencing where it would be desirable to have more accurate audio data than video data and to further provide a user the ability for adaptive billing based on bandwidth cost desired.

Regarding claim 115, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein the encoder means includes means for determining which of the plurality of encoding parameter sets to use based at least in part on a wireless mobile receiver capability" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 116, Christopoulos, Short and Kost disclose ""the system of Claim 112, wherein the encoder means includes means for determining which of the plurality of encoding parameter sets to use based at least in part on a number of users requesting a specific multimedia stream at a designated QoS for that stream" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 117, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein the encoder means includes means for determining which of the plurality of encoding parameter sets to use based at least in part on a multimedia data type" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 118, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein the encoder means includes means for determining which of the

plurality of encoding parameter sets to use based at least in part on a wireless user preference" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 122, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein at least one of the plurality of encoding parameter sets comprises an an encoding parameter set that is used to encode the multimedia stream at a resolution of a quarter common intermediate format (QCIF) or smaller" ([0036]-[0038], [0046]-[0047], Fig. 5).

Regarding claim 124, Christopoulos, Short and Kost disclose "the system of Claim 81, wherein the computer determines which of the plurality of encoding parameter sets to use based at least in part on a system bandwidth" ([0035]-[0036]).

Regarding claim 125, Christopoulos, Short and Kost disclose "the system of Claim 81, wherein the computer determines which of the plurality of encoding parameter sets to use based at least in part on a current available system bandwidth" ([0035]-[0036]).

Regarding claim 126, Christopoulos, Short and Kost disclose "the method of Claim 93, wherein the selecting act is undertaken at least in part based on a bandwidth" ([0035]-[0036]).

Regarding claim 127, Christopoulos, Short and Kost disclose "the system of Claim 102, wherein the factor is a system bandwidth" ([0035]-[0036]).

Regarding claim 128, Christopoulos, Short and Kost disclose "the system of Claim 102, wherein the factor is a current available system bandwidth" ([0035]-[0036]).

Regarding claim 129, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein the encoder means further includes means for determining which of the plurality of encoding parameter sets to use based at least in part on a system bandwidth" ([0035]-[0036]).

Regarding claim 130, Christopoulos, Short and Kost disclose "the system of Claim 112, wherein encoder means further includes means for determining which encoding parameter set to use based at least in part on a current available system bandwidth" ([0035]-[0036]).

6. Claims 3-4, 24, 27-28, 48, 51-52, 72, 75-76, 88-90, 98-100, 108-110, and 119-121 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos), Kost et al. (US 2002/0154691 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short), and in further view of Vetro et al. (US 2004/0203851 hereinafter Vetro)

Regarding claims 3-4, 24, 27-28, 48, 51-52, and 72, Christopoulos, Short and Kost disclose the limitations of claims 1-2, 25-26, and 49-50, as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

Regarding claims 75-76, Christopoulos, Short and Kost disclose the mobile station of claim 74 as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and

multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos and Kost for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

Regarding claims 88-90, Christopoulos, Short and Kost disclose the system of claim 86 as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos and Kost for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

Regarding claims 98-100, Christopoulos, Short and Kost disclose the method of claim 93 as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content

delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos and Kost for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

Regarding claims 108-110, Christopoulos, Short and Kost disclose the system of claim 102 as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos and Kost for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

Regarding claims 119-121, Christopoulos, Short and Kost disclose the system of claim 112 as described above, but while Christopoulos discloses selecting an encoding means based on various parameters such as user preferences and multimedia data type, Christopoulos does not explicitly state doing so with a corresponding billing scheme.

However, Vetro teaches the delivery of content with content adaptation via transcoding ([0079]-[0082]), where a billing method is agreed upon for the content delivery ([0067], [0073]-[0078]), and billing method is based on various factors including environment descriptions ([0035]-[0041]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Christopoulos and Kost for selecting a more customized encoding means based on various parameters such as

user preferences and multimedia data type with the teachings of Vetro for selecting a more customized encoding means based on various parameters such as user preferences and multimedia data type with corresponding billing scheme. One would have been motivated to do so, for the purpose of generating a more adaptable billing scheme based on a more customized encoding and delivery of data.

7. Claims 6, 30, 54, and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos) and in view of Kost et al. (US 2002/0154691 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short) as applied to claims 2, 26, 50, and 74 above, and in view of Wang et al. (US 2002/0152317 hereinafter Wang).

Regarding claim 6, Christopoulos, Short and Kost disclose the apparatus of claim 2 as described above, but while Christopoulos teaches selecting an encoding scheme based on various parameters and subsequently encoding and received stream, Christopoulos does not explicitly state the apparatus "comprising a plurality of encoders, each for executing the encoder parameter set based on the encoding scheme".

However, Wang teaches a transcoder using a plurality of encoders each for executing an encoder parameter set ([0027], Fig. 6), where the transcoder receives an encoded stream, decodes the encoded stream with a decoder (Fig. 6 item 62) then re-encodes the received stream via selection of a plurality of encoders (Fig. 6 items 64A-N) creating the possibility of multiple output streams to clients using multiple different encoding parameters sets specific to the clients ([0028]-[0029], [0030]-[0035]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to combine the teachings of Christopoulos and Kost for selecting an encoding means when re-encoding a receiving stream based upon various parameters via use of a transcoder with the teachings of Wang for use of multiple encoders in a transcoder as an encoding means when re-encoding a receiving stream based upon parameters. One would have been motivated to use multiple encoders and a decoder in a transcoder as opposed to multiple transcoders for the purpose of using a single transcoder to process the same stream for an output encoding scheme as necessary for any requesting clients as suggested by Wang ([0030]-[0031]).

Regarding claim 30, Christopoulos, Short and Kost disclose the method of claim 26 as described above, but while Christopoulos teaches selecting an encoding scheme based on various parameters and subsequently encoding and received stream, Christopoulos does not explicitly state the method "comprising executing the encoder parameter set using a plurality of encoders".

However, Wang teaches a transcoder using a plurality of encoders each for executing an encoder parameter set ([0027], Fig. 6), where the transcoder receives an encoded stream, decodes the encoded stream with a decoder (Fig. 6 item 62) then re-encodes the received stream via selection of a plurality of encoders (Fig. 6 items 64A-N) creating the possibility of multiple output streams to clients using multiple different encoding parameters sets specific to the clients ([0028]-[0029], [0030]-[0035]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to combine the teachings of Christopoulos and Kost for selecting an encoding means when re-encoding a receiving stream based upon various parameters via use of a transcoder with the teachings of Wang for use of multiple encoders in a transcoder as an encoding means when re-encoding a receiving stream based upon parameters. One would have been motivated to use multiple encoders and a decoder in a transcoder as opposed to multiple transcoders for the purpose of using a single transcoder to process the same stream for an output encoding scheme as necessary for any requesting clients as suggested by Wang ([0030]-[0031]).

Regarding claim 54, Christopoulos, Short and Kost disclose the apparatus of claim 50 as described above, but while Christopoulos teaches selecting an encoding scheme based on various parameters and subsequently encoding and received stream, Christopoulos does not explicitly state the apparatus "comprising means for executing the encoder parameter set using a plurality of encoders".

However, Wang teaches a transcoder using a plurality of encoders each for executing an encoder parameter set ([0027], Fig. 6), where the transcoder receives an encoded stream, decodes the encoded stream with a decoder (Fig. 6 item 62) then re-encodes the received stream via selection of a plurality of encoders (Fig. 6 items 64A-N) creating the possibility of multiple output streams to clients using multiple different encoding parameters sets specific to the clients ([0028]-[0029], [0030]-[0035]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to combine the teachings of Christopoulos and Kost for selecting an encoding means when re-encoding a receiving stream based upon various parameters via use of a transcoder with the teachings of Wang for use of multiple encoders in a transcoder as an encoding means when re-encoding a receiving stream based upon parameters. One would have been motivated to use multiple encoders and a decoder in a transcoder as opposed to multiple transcoders for the purpose of using a single transcoder to process the same stream for an output encoding scheme as necessary for any requesting clients as suggested by Wang ([0030]-[0031]).

Regarding claim 78, Christopoulos, Short and Kost disclose the mobile station of claim 74 as described above, but while Christopoulos teaches selecting an encoding scheme based on various parameters and subsequently encoding and received stream, Christopoulos does not explicitly state the apparatus "comprising a plurality of encoders, each for executing the encoder parameter set based on the encoding scheme".

However, Wang teaches a transcoder using a plurality of encoders each for executing an encoder parameter set ([0027], Fig. 6), where the transcoder receives an encoded stream, decodes the encoded stream with a decoder (Fig. 6 item 62) then re-encodes the received stream via selection of a plurality of encoders (Fig. 6 items 64A-N) creating the possibility of multiple output streams to clients using multiple different encoding parameters sets specific to the clients ([0028]-[0029], [0030]-[0035]).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to combine the teachings of Christopoulos and Kost for selecting an encoding means when re-encoding a receiving stream based upon various parameters via use of a transcoder with the teachings of Wang for use of multiple encoders in a transcoder as an encoding means when re-encoding a receiving stream based upon parameters. One would have been motivated to use multiple encoders and a decoder in a transcoder as opposed to multiple transcoders for the purpose of using a single transcoder to process the same stream for an output encoding scheme as necessary for any requesting clients as suggested by Wang ([0030]-[0031]).

8. Claims 13, 15, 37, 39-40, 61, and 63-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos) in view of Kost et al. (US 2002/0154691 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short), and in further view of Anand et al. (US 6,920,179 hereinafter Anand).

Regarding claims 13, 37, and 61, Christopoulos, Short and Kost disclose the limitations of claims 12, 36, and 60 as described above, but while Christopoulos teaches the use of QCIF which typically transmitted at 10 frames per second, hereinafter 'fps', is within the bandwidth of 16 kilo-bits per second, hereinafter kbps, Christopoulos does not explicitly state a first frame rate of 10fps and bandwidth of 16kbps.

However, Anand discloses transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream (col. 4 line 66 - col. 5 line 31, Fig.

2) may be received from a wired network (Fig. 4 item 420) and subsequently transcoded at a transcoder (Fig 4 item 424) prior to transmission to a mobile receiver (Fig. 4 item 104), into a different encoded stream (col. 7 line 54 – 65, Figs. 3 and 5) at different fps and bps including QCIF at 10fps.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Christopoulos and Kost for transcoding a received stream into various levels including QCIF with the teachings of Anand for transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream is transcoded into various levels including QCIF at 10fps. One would have been motivated to do so, for the purpose of providing a more customized encoding scheme and better encoding adaptation when transcoding from a source stream via using widely used formats such as QCIF and CIF at varying fps such as 10 and 15fps and varying bps.

Regarding claims 15 and 39, Christopoulos, Short and Kost disclose the limitations of claims 14, 38, and 62 as described above, but while Christopoulos teaches the use of commonly used resolution formats in video communications such as QCIF and CIF, Christopoulos does not explicitly state a first resolution is VGA format, but does state a second resolution and first frame rate configured for a handheld device as described above.

However, Anand discloses transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream (col. 4 line 66 - col. 5 line 31, Fig.

2) may be received from a wired network (Fig. 4 item 420) and subsequently transcoded at a transcoder (Fig 4 item 424) prior to transmission to a mobile receiver (Fig. 4 item 104), into a different encoded stream (col. 7 line 54 – 65, Figs. 3 and 5) at different fps and bps including QCIF at 10fps, where OFFICIAL NOTICE is taken that the use of VGA widely used in wired communications such as for personal computer monitors, and therefore would have been obvious to try for the purpose of providing compatibility with source streams of widely used wired communication formats such as VGA.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Christopoulos and Kost for transcoding a received stream of various formats with the teachings of Anand for transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream is transcoded from various wired formats into various wireless formats. One would have been motivated to do so, for providing compatibility with source streams of widely used wired communication formats.

Regarding claims 39-40, and 63-64, Christopoulos, Short and Kost disclose the limitations of claims 14, 38, and 62 as described above, but while Christopoulos teaches the use of QCIF and CIF which typically transmitted at 10 frames per second, hereinafter 'fps', or 15 is within the bandwidth of 16 kilo-bits per second, hereinafter kbps, to 64kbps and 32 to 64 kbps, respectively, Christopoulos does not explicitly state a first frame rate of 10fps and bandwidth of 16kbps.

However, Anand discloses transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream (col. 4 line 66 - col. 5 line 31, Fig. 2) may be received from a wired network (Fig. 4 item 420) and subsequently transcoded at a transcoder (Fig 4 item 424) prior to transmission to a mobile receiver (Fig. 4 item 104), into a different encoded stream (col. 7 line 54 – 65, Figs. 3 and 5) at different fps and bps including QCIF at 10fps.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Christopoulos and Kost for transcoding a received stream into various levels including QCIF with the teachings of Anand for transcoding in a heterogeneous network for instance a wired-to-wireless network where a received stream is transcoded into various levels including QCIF at 10fps. One would have been motivated to do so, for the purpose of providing a more customized encoding scheme and better encoding adaptation when transcoding from a source stream via using widely used formats such as QCIF and CIF at varying fps such as 10 and 15fps and varying bps.

9. Claim 18, 43, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos) and Kost et al. (US 2002/0154691 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short) as applied to claims 1, 42 and 66 in view of Patterson (US 6,018,369 hereinafter Patterson) and Tsukagoshi (US 5,731,847 hereinafter Tsukagoshi).

Regarding claims 18, 43 and 67, Christopoulos, Short and Kost disclose the apparatus of claims 1 and 66 and the method of claim 42,

"wherein the first encoding parameter is only for encoding audio data," (see Kost [0084])

"wherein the second encoding parameter set is only for encoding video data, " (see Kost [0084], see Christopoulos Fig. 5, [0046])

But, while Christoploulos discloses a parameter set for only encoding a third type of data different from the first two (image data Fig. 4, [0039]), neither Christopoulos nor Short or Kost disclose a third parameter set to encode only text data or selecting a text data type encode with audio and or video data.

However, Tsukagoshi discloses a parameter set (*3rd parameter set)* for only encoding a text data type being closed caption data (where text data is considered the 3rd data type, abstract) and Patterson discloses encoding text data with other data types being video data (abstract, Fig. 3).

Therefore, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Christopoulos, Short and Kost for selectively encoding three types of data in combination or individually with the teachings of Tsukagoshi for encoding text data separately and Patterson for encoding text data with other data types. One would have been motivated to do so to account for environments to loud for the audio portion to be heard or where bandwidth is limited reducing the ability to provide a more bandwidth intensive video and or audio portion.

10. Claims 92 and 123 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopoulos et al. (US 2001/0047517 hereinafter Christopoulos) in view of Kost et al. (US 2002/0136298 hereinafter Kost) and Short et al. (US 6,789,110 hereinafter Short) as applied to claims 14, 38, 62, 81, and 112.

Regarding claim 92, Christopoulos, Short and Kost disclose the system of claim 81 as described above, but while Christopoulos teaches the use of CIF and QCIF with transcoding along with QCIF being a resolution in an encoding parameter set, Christopoulos does not explicitly state CIF being a resolution in an encoding parameter set. However, OFFICIAL NOTICE is taken that the use of resolutions such as QCIF and CIF are widely used resolution standards for mobile display device, therefore CIF would have been obvious to try for the purpose of providing selection of widely used resolution standards when selecting encoding parameter sets.

Regarding claim 123, Christopoulos, Short and Kost disclose the system of claim 112 as described above, but while Christopoulos teaches the use of CIF and QCIF with transcoding along with QCIF being a resolution in an encoding parameter set, Christopoulos does not explicitly state CIF being a resolution in an encoding parameter set. However, OFFICIAL NOTICE is taken that the use of resolutions such as QCIF and CIF are widely used resolution standards for mobile display device, therefore CIF would have been obvious to try for the purpose of providing selection of widely used resolution standards when selecting encoding parameter sets.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK P. STANLEY whose telephone number is (571)270-3757. The examiner can normally be reached on 8:00AM - 5:00PM Mon-Fri EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2427

/Scott Beliveau/
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